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BUREAU OF ENTOMOLOGY AND PLANT QUARANTINE

FOREST INSECT INVESTIGATIONS

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Forest Insect Laboratory
Berkeley, California
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FOREST INSECT SURVEYS, MONO NATIONAL FOREST

Season of 1938.

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FOREST INSECT SURVEYS, MONO NATIONAL FOREST

Season of 1938.

A survey of forest insect conditions was made in the Mono National Forest by the Bureau of Entomology and Plant Quarantine during September, 1938. The survey also included an examination of defoliators, particularly the Great Basin tent caterpillar, Malacosoma fragilis, the pine tip moth, Rhyacionia spp., and Oslar's Tussock Moth, Hemerocampa oslari..

Barkbeetles.

General observations rounded out the intensive examinations of the three sample areas in the forest. Infestations are light throughout the area with the exception of the Walker River Canyon between Sonora Road Junction and Coleville. The infestation in Jeffrey pine here is accentuated and conspicuous due to the narrowness of the canyon and the sparsity of the stand.

The losses in Jeffrey pine are due to the Jeffrey pine beetle, Dendroctonus jeffreyi, the flatheaded borers of the genus Melanophila, and the pine engraver beetle, Ips confusus.

The 1937 losses are very low and the loss so far for 1938 does not indicate any increase over that of the previous year. The average loss per section is 16 Jeffrey pines with a volume of 21,000 board feet for 1937; the loss so far for 1938 is 15 Jeffrey pines per section with a volume of 16,000 board feet. These losses favorably compare with those of former years of endemic infestations and in view of this, control action is not recommended.

Great Basin Tent Caterpillar.

The epidemic infestation of the Great Basin tent caterpillar, Malacosoma fragilis, which developed on the bitter brush in the open range regions of this forest in 1936, has completely subsided without causing serious damage. This infestation had spread over an area of 20,000 acres in the sage plains south of Mono Lake by early 1937, and bid fair to equal the destructive epidemics of previous years. The cause of its subsidence is not known, but it occurred before damage to the host resulted. Future observations are indicated to discover probable recurrence of this range defoliator.

Oslar's Tussock Moth.

This defoliator has also disappeared from the fir forests of the Mono. The epidemic infestations in the recreational regions at Reversed Creek and in Leevining Canyon persisted for a period of about 4 years prior to 1938 and resulted in creating a dead forest on parts of these areas. At least 80% of the white fir has died and is now highly visible in the form of bleached snags. Secondary insects, Scolytus and Tetropium, are now working in the defoliated stands and their activities will further increase the loss. Continued studies of these areas will eventually result in securing the total amount of damage for which this defoliator is primarily responsible.

The Pine Tip Moth. (Rhyacionia sp.)

Extensive injury to pinon pine is resulting from the work of the pine tip moth in the region between Topaz Lake and Gardnerville. The caterpillars of this moth feed in the terminal and lateral shoots, mining out the interior for a distance of 1 to 2 inches, and causing a die back equal to the full length of the wound. The injury is very conspicuous after the dying tip has changed to a sorrel color. Examination of many heavily attacked trees showed that between 80% and 90% of the tips were or had been, attacked and killed. Practically all trees on the infested area had been attacked. The average injury throughout the region is estimated to be 40% in loss of tips. The earliest record on this infestation was made in 1935 when the infestation was in the initial stage and was confined to a small area near the junction of the Yerrington road. Since that time it has spread over an area of more than 15,000 acres and shows no indications of an early decline. So far, the only damage has been the death of affected terminals, but death of the entire tree may result from long continued infestations. No practical control methods are known for this species. Further study of this infestation is planned in connection with other forest insect problems on this forest.

Table I. Plot Losses, Mono National Forest.

Plot	Timbered acreage.	Tree Species	1936			1937			1938 (Part.)		
			No. trees	Vol.	BM/acre	No. trees	Vol.	BM/acre	No. trees	Vol.	BM/acre
Mono Craters	260	Jeffrey pine	8	22,010	51	12	24,020	56	14	36,310	85
Hell Gate	60	Jeffrey pine	0	0	0	0	0	0	1	1,950	32
Leavitt Meadow	50	Jeffrey pine	2	1,640	33	0	0	0	0	0	0